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TIM BAYNE

Philosophy Department, School
of Philosophical, Historical and
International Studies, Monash
University, Melbourne Australia
tim.bayne@gmail.com

TOM MCCLELLAND

Department of Philosophy, School
of Social Sciences, University of
Warwick, United Kingdom
t.mcclelland@warwick.ac.uk

“FINDING THE FEEL”: THE MATCHING CONTENT CHALLENGE TO COGNITIVE PHENOMENOLOGY

abstract

From the first-person point of view, seeing a red square is very different from thinking about a red square, hearing an alarm sound is very different from thinking that an alarm is sounding, and smelling freshly-roasted coffee is very different from thinking that there is freshly-roasted coffee in one's vicinity. How might the familiar contrast between representing a fact in thought and representing it in perception be captured? One influential idea is that perceptual states are phenomenally conscious whereas thoughts are not. However, those theorists who hold that thoughts have a distinctive kind of phenomenal character – often known as “cognitive phenomenology” – cannot account for the contrast between thought and perception in this manner. This paper examines the various options that are available to advocates of cognitive phenomenology for capturing the experiential contrast between thought and perception, and argues that each of them faces serious challenges.

keywords

mental content, cognitive phenomenology, perceptual content, fregean content, representational format

1. The matching content challenge

As Horgan and Tienson (2002) have observed, the mainstream tradition in philosophy of mind since the middle decades of the last Century has tended to adopt a “divide and conquer” approach to the analysis of intentionality and phenomenal consciousness. Paradigmatic intentional states, such as judgment, desire and intention, have typically been regarded as devoid of any distinctive phenomenal character, whereas paradigmatic examples of phenomenal consciousness, such as perceptual experiences and bodily sensations, have typically been regarded as not inherently intentional. However, this separatist tradition in the philosophy of mind has been under serious pressure since the early 1990s, and it is now widely held that there are deep and important points of contact between intentionality and phenomenal consciousness. As the inseparatists see things, phenomenal consciousness and intentionality are “intertwined, all the way down to the ground” (Chalmers 2004, p. 179).

This paper is concerned with a puzzle that emerges from the interaction between two facets of inseparatism. The first facet involves representationalism regarding perceptual phenomenology, according to which the intentional content of an experience is reflected in its phenomenal character, such that any two perceptual experiences with the same content will have the same character. How best to understand perceptual content is an issue to which we will return, but for now we can equate the content of a perceptual experience with its accuracy conditions. The second facet of inseparatism with which we are concerned involves the nature of conscious thought. An increasingly influential group of theorists holds that thoughts have a distinctive kind of phenomenal character that sets them apart from other kinds of phenomenally conscious states, such as perceptual experiences, bodily sensations, and emotional feelings. The kind of phenomenology that is allegedly associated with (and proprietary to) thought has become known as “cognitive phenomenology”. The commitment to cognitive phenomenology can take various forms (Bayne & Montague 2011; Chudnoff 2015; Horgan & Tienson 2002; Smithies 2013). On a maximally coarse-grained conception of cognitive phenomenology, there is a single type of phenomenal property associated with thought, a property that characterizes thoughts in general and which fails to distinguish one kind of thought from another. However, most advocates of cognitive phenomenology endorse a richer and more nuanced conception of cognitive phenomenology, according to which the phenomenal character of thought reflects its intentional properties – notably its content and attitude. Horgan and Graham have articulated a representative (and influential) view of this kind:

There are phenomenologically discernible aspects of ... cognitive phenomenology, notably (i) the phenomenology of *attitude type* and (ii) the phenomenology of *content*. The former is illustrated by the phenomenological difference between, for instance, *occurrently hoping* that Hillary Clinton will be elected U. S. President and *occurrently wondering* whether she will be – where the attitude-content remains the same while the attitude-type varies. The phenomenology of content is illustrated by the phenomenological difference between *occurrently thinking* that Hillary *will* be elected and *occurently thinking* that she will *not* be elected—where the attitude-type remains the same while the content-type varies (Horgan and Graham 2012, p. 334; see also Horgan and Tienson 2002, p. 522).

Similar claims have been advocated by a number of other theorists. For example:

... generally, as we think – whether we are speaking in complete sentences, or fragments, or speaking barely or not at all, silently or aloud – the phenomenal character of our non iconic thought is in continual modulation, which cannot be identified simply with changes in the phenomenal character of either vision or visualization, hearing or auralization, etc. (Siewert 1998, p. 282; emphasis suppressed).

In addition to arguing that there is something it is like to think a conscious thought, I shall also argue that what it is like to think a conscious thought is distinct from what it is like to be in any other kind of conscious mental state, and that what it is like to think the conscious thought that *p* is distinct from what it is like to think any other conscious thought (Pitt 2004, p.2).

... both perceptual and cognitive experiences have intentional properties that are identical with their phenomenal properties. This extended version of intentionalism is needed in order to avoid the objection that the phenomenal properties of judgment are not specific enough to individuate their intentional contents and attitude types. On the extended version of intentionalism, the phenomenal properties of judgment are content-specific and attitude-specific. (Smithies 2014, p. 111)

Although these theorists do not share a single view of cognitive phenomenology, we take them all to endorse the claim that the intentional content of a thought plays a distinctive role in determining its phenomenal character. We can capture this idea with the following thesis:

Phenomenal Content Thesis (PCT): Occurrent thoughts have a distinctive kind of non-sensory phenomenal character, the nature of which is determined by their intentional content.

Note that many cognitive phenomenologists insist on distinguishing two forms of intentional content, internal (or “narrow”) content and external (or “broad”) content. The claim that a thought’s phenomenal character reflects its intentional content is relativized to internal content, and no such claim is made with respect to external content. We will reflect further on how different kinds of content fit into the discussion in due course.

PCT is controversial. Critics typically allow that conscious thought has a phenomenology of some kind, but they deny that there is any kind of *sui generis* cognitive phenomenology that might be associated with the contents of occurrent thought. Some critics reject cognitive phenomenology on the grounds that they can find no hint of it in their own acts of introspection (Prinz 2011; Wilson 2003); some reject it on the grounds that its existence

would be at odds with influential assumptions about the relationship between phenomenal consciousness and explanatory gap intuitions (Carruthers & Veillet 2010); and some reject it on the basis of a perceived tension between the (allegedly) non-processive nature of thought and the (allegedly) processive nature of conscious mental phenomena (Tye and Wright 2011)¹. We put these objections to one side here in order to focus on a fourth – and, we believe, novel – challenge to cognitive phenomenology: the *matching content challenge*.

To a first approximation the matching content challenge can be put as follows. Contrast a situation in which you *see* a wall painted a certain shade of blue at a certain distance from you (say, exactly 10 meters) with a situation in which you *judge* that there is a wall that is painted blue 10 meters in front of you. (Suppose that you have the thought in the absence of any visual experience.) Call the visual experience *V* and the experienced thought *T*. Intuitively, *V* and *T* have the same contents, yet it seems clear that there would be a phenomenal difference between them. What it is like to perceive that one's environment is thus-and-so is very different from what it is like to judge that one's environment is thus-and-so; certainly no-one would be tempted to confuse an act of judgment with an act of visual perception. But if it is possible for a judgment and a perceptual experience to share the same content, and if the phenomenology of a mental state reflects its content, then – the objection runs – *V* and *T* ought to have the same phenomenology. The advocate of PCT owes us an account of why the phenomenal character associated with thinking that *p* differs from that which is associated with perceiving that *p*. We will argue that providing such an account is a far from straightforward matter.

2. Refining the challenge

To the best of our knowledge the matching content challenge has not previously been discussed in the literature. However, there is a sizeable literature devoted to an objection that bears more than a passing resemblance to the matching content challenge: the common-sensibles objection to intermodal representationalist accounts of perceptual phenomenology. Intermodal representationalism is the view that the phenomenal character of a perceptual experience supervenes on its intentional content. A number of theorists have argued that intermodal representationalism must be false on the grounds that there are phenomenal differences between the perceptual modalities which cannot be captured by appealing to their intentional contents. For example, it is claimed that hearing something as happening overhead differs in phenomenal character from seeing it as happening overhead, and that seeing that an object is square differs in phenomenal character from feeling that it is square (see Block 1996; Lopes 2000; O'Dea 2006).

Some representationalists respond to this objection by appealing to manners of representation. They concede that perceptual states in different sense modalities can share the same content, but explain the phenomenological difference between these states in terms of a difference in their manners of presentation (Chalmers 2004; Crane 2007). On this line of thought, representing something as being overhead in an auditory way differs phenomenologically from representing something as being overhead in a visual way². What interests us here is not whether this line of response is needed in order to meet the common sensibles objection, but

1 For discussion of the objection from introspection see Bayne (unpublished); Spener (2011); Schwitzgebel (2008); for discussion of the explanatory gap objection see Bayne (2009) and McClelland (2016); for discussion of the processive objection see Forrest (in press).

2 Another way in which people have responded to the common sensibles objection is to concede that the objection undermines intermodal representationalism, and to retreat to a weaker, restricted, form of representationalism, according to which phenomenal character supervenes on intentional content only with respect to experiences drawn from the same sensory modality (Lycan 1996).

whether an analogous response might address the matching content challenge.

At the core of the following proposal is the idea that even when a thought and a perceptual state have matching content, they will differ with respect to the attitudes that are taken to those contents, and this difference is likely to bring with it a difference in phenomenal character. As we noted in the previous section, advocates of cognitive phenomenology typically take the attitude of a cognitive state to have a bearing on its overall phenomenal character. To use the example given by Horgan and Graham (see above), the claim is that occurrently *hoping* that Hillary Clinton will be elected President differs phenomenally from occurrently *wondering* whether she will be elected.

How might an appeal to attitude-related phenomenal character enable the cognitive phenomenologist to respond to the matching content challenge? Return to the scenario that we used to motivate the matching content challenge, in which one has a thought (*T*) and a visual experience (*V*), where *V* and *T* appear to have exactly the same intentional content. Now, even if the phenomenal character of a mental state reflects its content, it doesn't follow that *T* and *V* will have the same phenomenal character, for they clearly involve different attitudes: at a coarse-grained level of analysis the former is a thought and the latter is a perceptual state; at a more fine-grained level of analysis, the former is a judgment and the latter is a visual experience. The existence of attitude-related aspects of phenomenology ensures that the overall phenomenal character of *T* will be very different from that of *V*. Horgan and Graham, along with most other advocates of cognitive phenomenology, seem to regard propositional attitudes as an isolable aspect of one's phenomenology. They claim, for instance, that what it's like to hope that Hilary Clinton will be elected U.S. President is a combination of what it's like to adopt the hoping attitude toward a proposition and what it's like to be in a state with the propositional content that Hilary Clinton will be elected U.S. President. On this view, one aspect of a state's overall phenomenology is fixed by its content and another aspect of its overall phenomenology is fixed by its attitude.

The existence of attitude-based phenomenal character complicates the evaluation of the matching content challenge, for we can now no longer assume that *T* and *V* will have the same overall phenomenal character. However, a version of the matching content challenge can still be identified, for if the attitude and content of a state make isolable contributions to its phenomenology, then their overall phenomenal characters associated with *T* and *V* ought to have a common phenomenal element in virtue of their shared content. Thus, we ought to be able to bracket off attitude-based differences in the overall phenomenal characters and identify an aspect of their phenomenology that they share. But – so we claim – this cannot be done. It is not merely that *T* and *V* differ in their overall phenomenal character, they *also* seem to lack any common phenomenal element. As we will put it, there is no *aspectual match* in the phenomenal characters of *T* and *V*. The matching content challenge can thus be reformulated to accommodate attitude-dependent phenomenal character.

One might object that the refined formulation of the matching content challenge misrepresents the role that attitudes play in cognitive phenomenology. We have assumed a *componential* view of attitudes according to which the attitude and content of a state make phenomenologically distinct contributions to a state's overall phenomenal character. However, an alternative, non-componential, conception of cognitive phenomenology holds that the contribution that a state's attitude makes to its overall phenomenal character is in some way inseparable from the contribution that its content makes to its overall phenomenal character, such that their distinct contributions are not independently discernible in the phenomenology itself but are fused into a single phenomenal property. (Think of the role that eggs play in baking: they make a fixed contribution to the end product, but that contribution might not be identifiable in the baked

goods themselves³.) On the non-componential view, there will be no phenomenal element in common to all cognitive states with a certain attitude (say, judgments), nor will there be any phenomenal element in common to all thoughts with the same content.

Unlike the componential view outlined earlier, this non-componential view *would* block the matching content challenge, for if the contribution that a state's content makes to its overall phenomenal character is not discernable as such, then we would not expect *T* and *V* to have a phenomenal aspect in common. But although the non-componential view of cognitive phenomenology would block the matching content challenge, we set it to one side in what follows. We have two reasons for doing this. First, we ourselves regard the componential view as more plausible than the non-componential alternative. Insofar as a state's attitude and content both contribute to its overall phenomenal character, they seem to do so by generating distinct phenomenal characters, rather than by simply giving rise to a single, undifferentiated, phenomenal character. Second, it seems clear that most advocates of cognitive phenomenology also find the componential view more compelling than the non-componential view – indeed, we know of no explicit endorsement of the non-componential view. Consider the passage from Horgan and Tienson discussed above, in which they refer to the phenomenology of attitude-type and the phenomenology of content as “phenomenologically discernable aspects of cognitive phenomenology”.

So, how *should* one respond to the matching content challenge? We will examine three general lines of response. The first appeals to the idea that perception exhibits a form of richness that is absent from thought; the second appeals to the idea that thought involves a fundamentally different kind of content from that involved in perception; and the third appeals to the idea that perception and thought involve different representational formats. Each of these three lines of response draws on the idea that thought is “conceptual” whereas perception is “non-conceptual”, but they develop that rather nebulous suggestion in very different ways.

3. The richness of perception and the poverty of thought

It is often suggested that the phenomenal contrast between thought and perception has something to do with the richness of perception and the (relative) poverty of thought. In this section we examine three very different ways of developing this proposal.

3.1. The package response

We call the first of these three responses “the package response”. The idea here is inspired by a plausible account of modality-specific differences in perceptual experience. Consider Dretske's response to the claim that representationalists cannot accommodate the contrast between seeing motion and feeling motion. In seeing motion, he points out,

... one also experiences the object's shape, size, colour, direction of movement, and a host of other properties. That is why seeing and feeling [by touch] are much different even though the same thing (movement) is represented in both modalities (1995, p. 95).

³ This non-componential view of cognitive phenomenology can be understood on the model of a similar view of perceptual phenomenology. One might claim that the difference between seeing and hearing an object is not to be understood in terms of a modality-specific component that differs between the two perceptual experiences, and a content component that each experience shares. Rather, heard content is phenomenally unlike seen content, and the difference in modality means that the shared content of the states need not correspond to any shared phenomenology. Block seems to be hinting at just such a conclusion: “Imagine the experience of hearing something and seeing it in your peripheral vision. It is true that you experience the sound as having a certain loudness, but can't we abstract away from that, concentrating on the perceived location? And isn't there an obvious difference between the auditory experience *as of that location* and the visual experience *as of that location*?” (1996, p. 38).

Just as the contrast between visual experiences of motion and tactile experiences of motion is plausibly explained by appeal to the fact that the former represents motion only in the context of one “package” of attributes (one that contains representations of color) but the latter represents motion only in the context of a different “package” of attributes (one that contains representations of pressure), so too one might suggest that the phenomenal contrast between the perceptual representation of a property and its cognitive representation derives from the fact that the former involves a kind of clustering that is not required by the latter. For example, the perceptual representation of color is possible only in the context of a relatively rich representation of an object as having a particular form, size and spatial location⁴. By contrast, thought can represent color (or any other sensory attribute, for that matter) independently of the representation of any other sensory attribute. Thus, the richness of perception is mandatory in a way that the richness of thought is not. Might this difference between thought and perception account for the phenomenal contrast between them⁵?

We think it cannot. Although the richness of thought might not be *mandatory*, there is no reason to conclude that thought *cannot* represent the same range of objects and properties that are represented in perception. Consider again the scenario with which we introduced the matching content challenge, in which one both perceives a wall of such-and-such a hue at such-and-such a distance and also judges that there is a wall of such-and-such a hue at such-and-such a distance from one. It might well be true that the various elements of the perceptual experience are essential to it in a way in which the corresponding elements are not essential to the thought, but this need not entail any phenomenal difference between the two states. The fundamental point that lies at the heart of the matching content challenge is that identity of content ought to be accompanied by identity in (an aspect of) phenomenal character, but here we have identity of content in the absence of identity in any aspect of phenomenal character. The modal features that might distinguish perceptual representations from thoughts seem to be irrelevant when it comes to accounting for the phenomenal contrast between these states.

A second respect in which the richness of perception and the relative poverty of thought might be held to account for the contrast between perceptual phenomenology and cognitive phenomenology concerns the *grain* with which perception represents sensory features. Differences in degrees of specificity are strongly associated with the distinction between conceptual and non-conceptual content, as is highlighted in the following passage from Tye:

3.2. The specificity response

Beliefs and thoughts involve the application of concepts. One cannot believe that a given animal is a horse, for example, unless one has the concept *horse*. At a minimum, this demands that one has the stored memory representation *horse*, which one brings to bear in the appropriate manner (by, for example, activating the representation and applying it to the sensory input). However ... phenomenal seemings are *not* limited in this way. My experience of red₁₉, for example, is phenomenally different from my experience of red₂₁,

4 Exactly what features are mandatory is of course open for debate. On some interpretations of type-2 blindsight, for instance, subjects perceptually experience motion without perceptually experiencing color or shape (Macpherson 2015; Foley 2015). But even if certain kinds of sensory features are not strictly mandatory, it is hard to deny that perception involves a clustering of features in a way that thought does not.

5 It is interesting to note that Jackson (2003) invokes something like the clustering idea to explain why (as he sees it) perception has a phenomenology whereas thought does not. In other words, he treats these features as necessary conditions of phenomenality. The proposal that we are considering is of course that the clustering of perception might explain the contrast between perceptual phenomenology and cognitive phenomenology.

even though I have no stored memory representations of these specific hues, and hence no such concepts as the concepts red_{19} and red_{21} ... Phenomenal character, and hence phenomenal content, on my view is non-conceptual (Tye 1995, p. 139).

Tye is here appealing to the idea that the existence of phenomenal character derives from the fact that perceptual content is non-conceptual, where a mental state is taken to have non-conceptual content in virtue of the fact that it is not built up out of stored memory representations. Tye's appeal to non-conceptual content is of course deployed in an attempt to explain why (as he sees it) perceptual experiences have phenomenal character whereas thoughts do not, but cognitive phenomenologists might be tempted to deploy a version of Tye's position in an attempt to explain why perceptual phenomenology *differs* from cognitive phenomenology. The basic idea is that perception represents properties with a specificity – that is, a fineness of grain – that thought cannot match⁶.

Although many theorists would echo Tye's claim that ordinary perception outstrips (ordinary) thought with respect to its fineness of grain (see e.g., Peacocke 1992, p. 111; Heck 2000, pp. 489-490; Martin 1992, p. 745), the view does have its detractors. For example, Jackson rejects the idea that the specificity of perception outstrips that of thought, claiming that “we can *think* that things are *exactly* as our experience represents them to be” (2003, p. 266; italics in original). We do not take Jackson to be suggesting merely that there are logically possible scenarios in which we can think that things are exactly as our experience represents them to be; nor do we take him to be suggesting that we can think that things are exactly as our experience represents them to be only via an opaque mode of presentation (i.e. “things are exactly as they seem to be”). Rather, we take Jackson to be suggesting that ordinary thought can quite literally reflect the contents of ordinary perception with respect to the specificity of its contents.

We are not convinced that Jackson is right on this point. Although demonstrative thought can represent that things are thus-and-so (McDowell 1994; Brewer 2005), one might argue that in such cases the content of thought corresponds to that of perception only in an opaque or oblique manner. Certainly ordinary non-demonstrative thought seems to lack the resolving powers of perception. Consider what it is like to look at an ordinary perceptual scene, form a judgement about what that perceptual scene contains, close one's eyes for a few seconds, and then look again at the perceptual scene. It seems hard to deny that ordinary perceptually-mediated information about the world outstrips in its specificity that which can be encoded in ordinary thought⁷. But does this fact provide an adequate response to the matching content challenge? We are inclined to think not. Although the specificity of perception *typically* outstrips that of thought, it seems highly unlikely that this fact reflects a deep and essential contrast between perception and thought, for we see no reason to deny that the contents of thought *could* match those of perception with respect to their degree of specificity. In fact, there seem to be two ways in which a situation of this kind might arise. Firstly, we can conceive of a scenario in which the

6 One might also raise the mirror-image of this objection and suggest that perception is unable to achieve the level of generality that can be achieved by thought. On this view, perception might represent highly specific colors such as red_{23} but would be unable to represent red (Heck 2007). Of course, it is controversial just what kinds of high-level or more abstract properties can be represented in perception. See McClelland and Bayne (2016).

7 Frank Jackson writes: “To perceptually represent that things are thus and so essentially involves discrimination and categorisation, and that is to place things under concepts” (2003, p. 267). Jackson is here operating with a very thin conception of what it is to place something under a concept. It is certainly true that to represent a property involves discrimination and categorization, but perceptual systems can categorize properties without deploying representations that have the properties canonically associated with concepts, such as stimulus-independence and general recombination (see e.g. Camp 2009). This is why perceptual learning is different from ordinary, non-perceptual learning.

contents of perception are extremely coarse-grained, and the agent is able to perceive features of its environment only with the kind of specificity possessed by ordinary human thought. Secondly, we might imagine a scenario in which a creature's thoughts have unusually fine-grained content of the kind that matches the specificity of its perceptual content. (Consider, for example, an agent with stored representations corresponding to each of the shades that can be represented in conscious vision.) Would either of these scenarios bring about a content-reflecting match in the phenomenology of thought and vision? That seems highly unlikely. Of course, the very nature of the case makes it difficult to be certain on this point – by hypothesis, the scenario in question is radically unlike anything that we ourselves have experienced – but we think it implausible that one could engender a common phenomenal element to thought and perception merely by equating the grain of their contents. The phenomenal gap between thought and perception seems to be a difference in kind and not one of degree.

A third variant in this family of responses to the matching content challenge begins with the idea that the bandwidth of vision (and perception more generally) is higher than that of conscious thought. Put bluntly, the idea is that at any one point in time we can take in more of the world perceptually than we can entertain in conscious thought, and it is this difference in bandwidth which explains the phenomenal contrast between *T* and *V*.

3.3. The bandwidth response

One response that one might have to the bandwidth response is to challenge the claim that the bandwidth of perception really does outstrip those of conscious thought. It is certainly true that there is considerable debate about the bandwidth of perceptual content. Some theorists appeal to the data deriving from the partial-report paradigm pioneered by George Sperling (1960) to argue that the contents of visual consciousness overflow that of conscious thought (e.g. Block 2007; Tye 2006); other theorists argue that the bandwidth of conscious perception is coeval with that of conscious thought (e.g. Cohen et al. 2016), and that the apparent richness of visual experience is an illusion that can be explained away (e.g. O'Regan and Noë 2001). Our own view is that although certain conceptions of consciousness probably do over-estimate the richness of perception, there is nevertheless good reason to believe that the bandwidth of perception outstrips that of conscious thought (McClelland and Bayne 2016). But this issue can be put to one side here, for even if conscious perception does have a higher bandwidth than conscious thought, it is difficult to see how this fact might account for the phenomenal contrast between thought and perception. Even if a single perceptual experience of the wall contains significantly more information than could be contained in a single thought about it, the point remains that the thought and the perceptual state share a common content, and this content seems not to be reflected in their respective phenomenal characters.

So far we have been assuming a univocal understanding of content. Put simply, a state's content is a matter of the objects and properties that a state represents, and so any two states that represent the same objects and properties share the same content. This reflects a Russellian understanding of content. However, some theorists adopt a *pluralistic* understanding of content according to which a single state has different layers of content that play different explanatory roles. In particular, many theorists countenance a distinction between a state's Russellian content and its "Fregean" content⁸. Russellian content is a matter of what objects

4. Fregean content

⁸ We follow Chalmers (2004) and Thompson (2009) in referring to this content as "Fregean", but it should be noted that it differs from strictly Fregean content in certain ways, most notably in the fact that it is not committed to the idea that sameness of sense entails sameness of reference.

and properties are represented, whereas Fregean content is a matter of *how* those objects and properties are represented i.e. it involves an appeal to the modes of presentation via which things are represented. Two states might have the same Russellian content but different Fregean content. For instance, the belief that Hesperus is a star and the belief that Phosphorous is a star represent just the same entities but under different modes of presentation. Similarly, two states might have the same Fregean content but different Russellian contents. For instance, your belief that water quenches thirst and your twin-earth counterpart's belief that water quenches thirst represent different entities (H_2O and XYZ respectively) under the same mode of presentation (the transparent liquid that falls from clouds etc.).

How might the distinction between Russellian and Fregean content bear on the matching content challenge? The idea is that if the phenomenology of (at least one of) these states is determined by Fregean content rather than Russellian content then PCT would no longer entail that they would have an aspect of their phenomenology in common.

Some might object to the very idea that perceptual experiences could have a different kind of content to thought. For example, Frank Jackson writes:

Belief is the representational state *par excellence*. This means that to hold that [perceptual] experience has content in some sense in which belief does not is to deny rather than affirm representationalism about experience. There needs to be a univocal sense of 'content' at work when we discuss representationalism; a sense on which content is how things are being represented to be, and on which both beliefs and experiences have (representational) content (Jackson 2003, pp. 265f.).

It is true that representationalists are (by definition) committed to the idea that perceptual experiences have representational content, but it does not follow that this content must be identical in kind to that which characterizes thought. We see no reason to saddle the representationalist (or the cognitive phenomenologist, for that matter) with the assumption that the notion of content at play in discussions of perceptual experience and conscious thought must be univocal.

In principle, there are three ways in which an appeal to Fregean content might be deployed to meet the matching content challenge. Firstly, one might hold that the phenomenal content of perception is Fregean while that of thought is Russellian. But although this position might enable the matching content challenge to be met, we see little reason to take it seriously. For one thing, we know of no advocate of cognitive phenomenology who is at all tempted by this position. (The internalism that cognitive phenomenologists typically espouse surely militates against any inclinations that they might have towards Russellianism.) Moreover, Fregean accounts of thought are surely much more plausible than are Fregean accounts of perception, and it would be odd for a theorist to hold the latter but reject the former. A rather more plausible way of invoking Fregeanism to block the matching content challenge would be to argue either that perceptual content is Russellian while thought content is Fregean, or to argue that both perceptual content and thought content are Fregean, but that they present their intentional objects via distinct modes of presentation. We consider these two possibilities in turn.

4.1. Restricted Fregeanism

According to what we will call *Restricted Fregeanism*, the contrast between perceptual phenomenology and cognitive phenomenology derives from the fact that perceptual phenomenology is fixed by Russellian content whereas cognitive phenomenology is fixed by Fregean content. On this view, when we perceptually experience the blue wall we represent the wall and its blueness without representing the wall or its properties under any particular

guise, whereas judging that the wall is blue involves representing the wall and/or its blueness under some specific mode of presentation. Assuming that our cognitive phenomenology reflects the Fregean content of our judgement rather than its Russellian content, we could then explain why *T* and *V* lack a common phenomenal component.

What might motivate Restricted Fregeanism? Some support for the view might be derived from the literature on non-conceptual content, in which the suggestion that perceptual content is non-conceptual is sometimes equated with the claim that it is non-Fregean, whereas thought content is Fregean (see Byrne 2005). However, this line of argument is highly tendentious, not only because it is only one of many accounts of the conceptual/non-conceptual distinction, but also because the claim that perceptual content is exclusively non-conceptual is itself a matter of dispute.

Another line of argument would be to appeal to Restricted Fregeanism's capacity to explain the contrast between the directness of perceptual experiences and the relative indirectness of thought. This difference, the Fregean might suggest, obtains because thought represents things via modes of presentation whereas perception represents things without any such intermediaries. But this line of support is problematic, for the Fregean should not be understood as holding that the direct objects of thought are modes of presentation rather than objects and their properties; instead, the Fregean claim should be understood as the claim that we are aware of entities and their properties in specific ways. Modes of presentation should not be understood as intermediaries between a subject and the world, and so cannot be used to explain the putative indirectness of cognitive phenomenology.

In addition to the problems facing the leading arguments for Restricted Fregeanism, the view will also face objections from those who take the phenomenal character of perception to be determined by its Fregean content. For example, Chalmers (2004) and Thompson (2009) have argued that the possibility of qualia inversion demonstrates that perceptual phenomenology cannot be directly determined by represented objects and properties but must instead involve modes of presentation. Fregean treatments of perceptual phenomenology are of course controversial, but the point remains that any defence of Restricted Fregeanism will need to address them.

Another way of using Fregean content to address the matching content challenge would be to suggest that both thought *and* perception have Fregean content. This view – which we will call *Unrestricted Fregeanism* – allows that even when *V* and *T* share their Russellian content, their phenomenal characters might differ in virtue of the fact that those phenomenal characters will be determined by the ways in which the objects and properties that the two states represent are presented. For example, if *V* and *T* represent the wall's color or its spatial location under different modes of presentation then they would not share their Fregean content, and so need not share an aspect of their phenomenology.

4.2. Unrestricted Fregeanism

One advantage of Unrestricted Fregeanism is that it respects both the arguments for attributing Fregean contents to thoughts *and* the arguments for attributing Fregean contents to perception. However, this view constitutes a reply to the matching content challenge only if it is not possible for thought and perception to share the same Fregean contents (more carefully: only if it is not possible for thought and perception to share the same Fregean content without also sharing the same content-involving phenomenal character). In other words, Unrestricted Fregeanism requires either that thought and perception can never represent objects and properties via the same modes of presentation, or that if they did then the content-involving phenomenal contrast between them would disappear. We doubt that this conditional is true. Consider again states *V* and *T*. The two states represent the wall and its blueness, but do

they represent them under different modes of presentation? Focusing on the color property represented by both states, it is plausible that our thought represents blueness under just the same mode of presentation as our perceptual experience (Chalmers 2004). The burden of proof would certainly be on someone to motivate a difference in Fregean content here. Why think that blueness is represented under one guise by perception and another by thought?

Perhaps Jackson's case of Mary (1982) the neuroscientist might be taken to support such a view: Mary has a concept of blueness before escaping her achromatic prison – she can categorize objects as blue or not blue and understands complex theoretical propositions about how the perception of blue works – and yet it is arguable that when she perceptually experiences a blue object for the first time she represents that property under a mode of presentation previously unavailable to her.

Doubt might be cast on whether Mary's pre-escape concept of blue is really the same as our ordinary concept of blue, but how would things stand if we granted that the thought that the wall is blue presents blueness under a different mode of presentation to perception? Surely we would be able to introduce a different thought that represents it under the same mode of presentation (Chalmers 2004). Whatever reference-fixing condition our perceptual experience uses to refer to blueness, why could not we have a belief that uses just the same reference-fixing condition to refer to blueness? Why think there are modes of presentation unavailable to thought? After all, when Mary escapes her achromatic prison she does not just gain a new kind of experience, she gains a new concept with which to frame thoughts about colors – a concept that plausibly has just the same Fregean content as her perceptual experience of blueness. So long as it is possible to have a thought with the same Fregean content as one's perceptual experience, the matching content challenge persists.

- 5. Representational format** A third response to the matching content challenge involves the idea that perceptual content and thought content have very different representational formats, and that this difference might explain the contrast between their phenomenal characters. According to one venerable tradition, thought has a discursive or language-like structure whereas perception is imagistic or topographical. The contrast between discursive and non-discursive representation has also been associated with the contrast between conceptual and non-conceptual content (see e.g. Fodor 2007; Heck 2007), although this is perhaps a less influential unpacking of the conceptual/non-conceptual distinction than the accounts that we considered in the previous two sections. There are three respects in which discursive representations differ from non-discursive ones. Firstly, in discursive representations the relationship between the vehicles of representation and their contents is essentially arbitrary, whereas in non-discursive forms of representation there is some degree of isomorphism between representational vehicles and their contents. Secondly, non-discursive forms of representation typically fail to possess the capacities for logical structure that can be achieved by discursive representations. For example, discursive representational formats enable negation ("There are no robbers in the bank"), universal generalization ("All of the robbers are in the bank") and conditionalization ("If the robbers are in the bank then they will be caught"), whereas non-discursive representational formats typically struggle to support such features (although see Camp 2007). Thirdly, non-discursive representation is holistic whereas discursive representation is atomistic. For example, a part of a map of Greece represents a part of Greece, whereas a part of the word "Greece" does not represent anything at all⁹.

⁹ Some theorists have also suggested that there are other points of contrast between discursive and non-discursive representations. For example, Crane (2009) suggests that although non-discursive representations have accuracy

Now, one might argue that the contrast between the phenomenology of thought and that of perception is to be accounted for by appealing to the fact that thought is fundamentally discursive whereas perception is fundamentally non-discursive. This proposal allows that both thought and perception are kinds of propositional attitudes, and that the propositional contents of a thought might (in principle at least) perfectly match those of a perceptual experience.

Might this proposal provide a plausible response to the matching content challenge?

As we see it, there are two significant problems with it. For one thing, the assumption that thought is discursive whereas perception is non-discursive is not universally granted. Some suggest that perceptual experience is discursive; or at least that even if certain kinds of perceptual representations are non-discursive those that underwrite perceptual experience are discursive (Fodor 2007). Others deny that thought is fundamentally discursive, suggesting instead that the structure of (certain forms of) thought is likely to be topographical rather than linguistic (Braddon-Mitchell & Jackson 2007; Camp 2007; Jackson 1998; Rescorla 2009)¹⁰.

Even if the contrast between thought and perception does map onto the distinction between discursive and non-discursive representations, it is a further question whether this would yield the kind of phenomenal contrast between *T* and *V* for which we are looking.

The fundamental issue here is that the contrast between discursive and non-discursive representation is primarily a contrast in the nature of the representational vehicles and the ways in which vehicular properties are related to contentful properties, rather than a contrast in representational content as such¹¹. One can treat both discursive and non-discursive content in propositional terms (Matthen 2014), and there is nothing to prevent a single proposition (or set of propositions) from being represented either discursively or non-discursively. Of course, discursive formats can support the representation of propositions that cannot be represented non-discursively – we have already noted that the non-discursive representation of certain kinds of logical structures is far from trivial (see Camp 2007) – but this fact has no direct bearing on the question at hand, for we are here interested in propositions that *can* be represented both discursively and non-discursively.

The upshot of the foregoing reflections is that differences in representational format have a bearing on the matching content challenge only if the phenomenal character of a mental state does not supervene on its content. Representationalists are not universally committed to the claim that phenomenal character supervenes on content: when it comes to perception, intra-modal representationalists hold that the sensory modality to which a state belongs also has an impact on its phenomenal character, and the advocates of cognitive phenomenology typically hold that a thought's overall phenomenal character is fixed by both its content and its attitude. In principle there is nothing to prevent the cognitive phenomenologist from appealing to differences in representational format to account for the phenomenal contrast between perceiving that *p* and thinking that *p*. Nonetheless, we think that this move ought to be resisted. It is one thing to say that differences in manners of representation are reflected in our phenomenology, but quite another to say that differences in representational *format* are so reflected. At least some have argued on introspective grounds that manners of representation

conditions, only discursive (or what he calls “propositional”) representations have truth-conditions. Although it is certainly true that we tend to describe maps and images as in/accurate rather than true or false, we are not convinced that this fact reflects anything particularly deep about the contrast between discursive and non-discursive formats.

¹⁰ Although a number of philosophers have argued that (rational) thought requires a discursive format (e.g. Devitt 2006; Rey 1995), we take such claims to have been significantly undermined by the work of Camp (2007) and Rescorla (2009).

¹¹ Note, however, that this point is contested, for both Crane (2009) and Heck (2007) treat the contrast between discursive and non-discursive representation as having implications at the level of content.

(i.e., sensory modalities or propositional attitudes) show up in our phenomenology. It is, however, noteworthy that those debating the representational format of perceptual and cognitive states do not appeal to introspection. They take it to be an empirical question whether the format of an experience is discursive or non-discursive, suggesting that they do not regard representational format as the kind of thing that shows up in one's phenomenology.

- 6. Conclusion** The central aim of this paper has been to develop a novel challenge to cognitive phenomenology, understood here as the claim that there are phenomenal characters that are proprietary to the intentional contents of thought. The challenge is premised on the observation that advocates of cognitive phenomenology are committed to PCT: the claim that the contents of a thought are reflected in its phenomenology. PCT entails that if a thought and a perceptual experience have the same content then they also share an aspect of their phenomenology. But thoughts and perceptual experiences never seem to share such a phenomenal aspect, so advocates of PCT must respond by casting doubt on the possibility of thoughts and perceptual experiences sharing the same content.
- The first response involved the suggestion that perceptual content is richer than the content of thought. However, we found there is no viable understanding of “richness” that plausibly precludes a thought and a perceptual experience from having the same degree of richness, and we suggested that thoughts and perceptual experiences which were equally rich would nonetheless differ in phenomenal character. The second response involved the suggestion that differences between thought content and perceptual content emerge once Fregean content is considered. But we found that no plausible version of this response can capture the required difference in phenomenal character. The third response involved the suggestion that the phenomenal contrast between thought and perception might be explained in terms of differences in representational format. In addition to noting that claims surrounding the representational format of perception and thought are themselves contentious, we also argued that appealing to such differences would help address the matching content challenge only if one assumes that the format of a representation is reflected in its phenomenology, and that assumption seems implausible. Each of these three responses draws on a plausible – or at least influential – understanding of the contrast between conceptual and non-conceptual content. As such, the apparent failure of these responses suggests that the matching content challenge will not be met by appealing to that distinction¹².
- By way of bringing this paper to a close, we want to consider one very different line of response that might be taken to the matching content challenge. We have framed the matching content challenge in terms of the assumption that perceptual experiences have representational

12 One further response that is worth mentioning at this point is inspired by Horgan's (2014) reflections on the contrast between the way in which color is represented in thought and the way in which it is given in perception. Horgan claims that colors are presented in perception as intrinsic, sensuous properties of external objects themselves – “properties whose manifest nature is just their intrinsic, sensuous, what-they-are-like-ness” (2014, p. 336). Following Chalmers (2006), Horgan refers to these color properties as “Edenic properties”. However, he also argues that science has shown that there are no such properties, and thus that nothing corresponds to the way in which colors are perceptually presented. With respect to judgment Horgan takes a very different line, arguing that in worlds (such as ours) from which Edenic colors are absent the color-involving content of judgment refers to a Lockean disposition of a certain sort. Horgan's treatment of color points the way to a possible response to the matching content challenge, for if perception and thought traffic in very different properties then it is no wonder that the phenomenology of perception differs so radically from that of thought. In our view the central problem with this proposal concerns its generality. Even if the proposal can be plausibly extended beyond the phenomenal character of color-involving contents to include the phenomenal contrasts associated with secondary qualities of all forms, we find it difficult to see how it might account for the phenomenal contrasts associated with the representation of primary qualities, such as spatial relations.

content, and that perceptual phenomenology in some way reflects this content. But of course there is an influential school of thought, naïve realism, which denies that perceptual experiences have representational content (Brewer 2006; Johnston 2006; Travis 2004). Some members of this school allow that perceptual experience can be taken to have “content” in some sense of that term, but they are keen to describe such contents as “presentational” in order to distinguish them from the “representational” contents of thought.

Might the appeal to naïve realism address the matching content challenge? The answer to this question depends on the answer to two further questions: Firstly, does naïve realism really side-step the matching content challenge? And, secondly, will naïve realism hold any appeal for the advocates of cognitive phenomenology?

It is not implausible to suspect that the answer to the first question might be “yes”, for naïve realists have long argued that one of the virtues of their view is that it (alone) can account for the first-person contrast between thought and perception (see e.g. Brewer 2006; Campbell *forthcoming*; Hellie 2007). More directly, one might think that insofar as naïve realists deny that perceptual experiences have “content”, then the matching content challenge cannot even be formulated, for the challenge was premised on the assumption that perceptual experiences have content. Of course, one might challenge the naïve realist to explain why a thought representing a certain state of affairs has no phenomenal aspect in common with a perceptual experience that presents the very same state of affairs. (After all, if phenomenology is fixed by what we are directly aware of, then naïve realists would be lumbered with the (false) prediction that thoughts and perceptions that are intentionally directed towards the same objects/properties will share the same phenomenology.) In response, the naïve realist might simply argue that the contrast between representation and presentation does all the explanatory work that is needed: cognitive access to a state of affairs differs so dramatically from perceptual access to it because the former is representational whereas the latter involves a direct relation. We suspect that this response will ultimately founder against the rock of hallucination, for hallucinations share the directness of perception (they are perceptual experiences in our terminology), and yet they involve no relations to their intentional objects. But whether or not naïve realists can successfully meet the matching content challenge, we suspect that this issue will ultimately be of little interest to the advocates of cognitive phenomenology, for we see little enthusiasm for naïve realism among their ranks. The reason for this, we suspect, is that cognitive phenomenologists are typically internalists about phenomenal properties, holding that a subject’s phenomenal properties are fixed by their internal/intrinsic properties. By contrast, naïve realism entails a fairly radical form of externalism, for it holds that facts about a subject’s phenomenal states constitutively depend on its environmental relations. Any solution to the matching content challenge which implied that certain kinds of phenomenology are relational rather than monadic would be anathema to most advocates of cognitive phenomenology. The matching content challenge is not a knock-down objection to the view that cognitive episodes have a proprietary phenomenology that reflects their content. It does, however, show that a great deal more work needs to be done to understand the relationship between perceptual and cognitive phenomenology. If thoughts and perceptual experiences can share content, and the phenomenology of both thoughts and perceptual experiences reflects their content, why do our cognitive and perceptual experiences not share a phenomenal aspect? Perhaps there is no distinctive phenomenology of thought – or at least, not one that is fixed by thought’s intentional content¹³.

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